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FREE EBOOK

DESIGN AND DTP

Getting Files Ready for the Printer

Paper sizes, bleed, CMYK, resolution and print-ready PDFs

INSIDE THIS BOOK

- Paper sizes and paper types
- RGB and CMYK
- Resolution: print versus screen
- Bleed, trim and safe area
- ...and 7 more chapters, practice questions and a glossary

Beginner to intermediate

DTP students and print-shop staff

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Getting Files Ready for the Printer

Learn what printers need from you so that your cards, leaflets, books and banners come out right the first time. The book explains paper sizes, CMYK colour, resolution, bleed, fonts, black and spot colours, proofing, imposition, folding and binding, and ends with a preflight checklist and the mistakes that cost the most money.

WHO IT IS FOR	DTP students and print-shop staff
LEVEL	Beginner to intermediate
SUBJECT AREA	Design and DTP
WHAT IS INSIDE	11 chapters, practice questions with answers, and a glossary

HOW TO USE IT

Read one chapter at a time and try the examples as you go: on a computer, at your workbench or in your notebook. The boxes give tips, safety points and short activities. When you finish, test yourself with the practice questions and check your answers at the end. Words you may not know are explained in the glossary.



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What you will find inside

1	Paper sizes and paper types	4
2	RGB and CMYK	6
3	Resolution: print versus screen	7
4	Bleed, trim and safe area	9
5	Fonts: embedding and outlining	11
6	Black, rich black and spot colours	13
7	Proofing	14
8	Imposition basics	16
9	Flex and vinyl printing	17
10	Folding and binding	19
11	Preflight, talking to the printer, and costly mistakes	21
	Practice questions	23
	Answers	24
	Glossary	25

Paper sizes and paper types

A design is not finished until it is printed. Before you draw anything, you need to know the size of the finished piece and the paper it will be printed on.

The A series

Most of the world, including India, uses the international **A series** of paper sizes. The biggest, A0, has an area of one square metre. Each next size is half of the one before, made by cutting the long side in half and rounding to the nearest millimetre.

Size	Millimetres	Common use
A0	841 x 1189	Large posters, drawings
A1	594 x 841	Posters
A2	420 x 594	Posters, charts
A3	297 x 420	Small posters, certificates, drawings
A4	210 x 297	Letters, forms, leaflets
A5	148 x 210	Leaflets, small booklets, notebooks
A6	105 x 148	Postcards, small cards

The sides of every A size are in the same ratio, about 1 to 1.414. So when you halve an A4 page you get an A5 page of exactly the same shape. You can scale an A4 design to A3 or A5 without changing the layout.

Sizes in inches

Many Indian printers still work in inches for some jobs.

- Visiting cards are commonly 3.5 x 2 inches (88.9 x 50.8 mm).
- Paper is often bought in large sheets, such as 20 x 30 inches or 23 x 36 inches, and cut down.
- Many digital printing machines use sheets of around 12 x 18 or 13 x 19 inches.

- Posters are often sized to fit a big sheet with little waste; for example, 18 x 23 inches is half of a 23 x 36 sheet.

Ask your printer which sheet they use. The sheet decides how many copies fit, how much paper is wasted, and so the price.

Paper weight: GSM

Paper thickness is usually described by its weight in **GSM**, grams per square metre: how much one sheet one metre by one metre would weigh. A higher number means thicker, stiffer paper.

GSM (approximate)	Feels like	Typical uses
70 to 80	Ordinary copier paper	Forms, letters, notebooks
90 to 130	A little thicker	Letterheads, leaflets, flyers
130 to 170	Smooth and firm	Posters, brochures
250 to 350	Card	Visiting cards, certificates, covers

EXAMPLE

An A4 sheet is one-sixteenth of a square metre. So an 80 GSM A4 sheet weighs $80 \div 16 = 5$ grams, and a ream of 500 sheets weighs 2,500 grams, or 2.5 kg.

Coated and uncoated paper

- **Coated** paper has a smooth surface layer. In India it is often called **art paper**, or **art card** when thick. It comes in gloss or matt finish and gives sharp, bright colours.
- **Uncoated** paper has no coating. A common Indian name for it is **maplitho**. Colours look softer, but it is easy to write on, so it suits forms and letterheads.

TIP

Ask the printer for paper samples and hold them. A design for a glossy art card and the same design on rough uncoated paper can look very different.

RGB and CMYK

Your screen and a printing machine make colour in opposite ways. Understanding this saves many disappointments.

RGB: colour from light

A screen makes colour by mixing **red, green and blue light**. This is called **RGB**. With no light you get black. With all three at full strength you get white. Because a screen gives out light, it can show very bright, glowing colours.

CMYK: colour from ink

A printer puts ink on paper. The paper reflects light, and the ink absorbs some colours of it. Colour printing mixes four inks:

Letter	Ink
C	Cyan, a bright blue-green
M	Magenta, a pink-purple
Y	Yellow
K	Black (K stands for "key")

In theory, cyan, magenta and yellow together make black. In practice they make a muddy dark brown, use a lot of ink and take long to dry. So printers add a separate black ink, which also gives sharp black text.

Gamut: why bright colours turn dull

The range of colours a device can produce is called its **gamut**. Screens can show some colours, such as very bright greens, blues and oranges, that CMYK inks cannot print. When an RGB design is printed, these colours are shifted to the nearest printable colour and often look duller.

EXAMPLE

Kavya designs a leaflet for a juice shop in Hyderabad using a glowing lime green on screen. She sends an RGB file. The printed leaflets come back with a flat, olive-like green, and the owner is unhappy. If she had worked in CMYK from the start, she would have seen the duller green on screen and chosen a stronger printable colour.

Working with CMYK

1. Set the document's colour mode to CMYK when you start a print job.
2. Pick important colours by their CMYK numbers, not by eye.
3. Use a printed **CMYK colour guide**, a booklet of printed colour patches with their numbers. Choose from paper, not from the screen.
4. Photos usually come from cameras and phones in RGB. Ask the printer whether they want you to convert them to CMYK or send them as they are with the correct colour settings in the PDF. Different printers work differently.

Colour profiles

A **colour profile** is a small data file that describes how a particular device or printing process shows colour. Design programs use profiles to convert RGB to CMYK. Printers often recommend a profile that suits their machines and paper. If yours does, use it.

REMEMBER

No two screens show colour exactly the same, and a phone screen is usually much brighter than print. For colour-critical jobs, trust a printed proof, never the screen.

CHAPTER 3

Resolution: print versus screen

Pixels, ppi and dpi

A photo is made of tiny squares called **pixels**. **Resolution** tells you how many pixels fit into each inch of the printed photo. This is measured in **ppi**, pixels per inch.

You will also hear **dpi**, dots per inch. Strictly, dpi describes how finely a printer lays down ink dots, while ppi describes the image. In everyday use people say "300 dpi" when they mean 300 ppi. Understand what they mean; there is no need to correct them.

How much is enough?

Item	Viewing distance	Common guide at final size
Visiting card, brochure, book	Held in the hand	About 300 ppi
Poster on a wall	A metre or two	About 150 to 300 ppi
Large banner	Several metres	Often around 72 to 150 ppi
Screen only	Not applicable	Pixel size matters; ppi does not

These are working guides. Always follow what your printer asks for.

Working out the pixels you need

Pixels needed = printed size in inches x ppi. One inch is 25.4 mm.

Printed size	At 300 ppi
Visiting card, 3.5 x 2 inches	1050 x 600 pixels
A5, about 5.83 x 8.27 inches	about 1748 x 2480 pixels
A4, about 8.27 x 11.69 inches	about 2480 x 3508 pixels

Scaling changes resolution

When you place a photo and make it bigger, its pixels spread over more inches, so its resolution drops. A photo that is 300 ppi at 10 cm wide becomes only 150 ppi if you stretch it to 20 cm wide.

EXAMPLE

Imran has a photo 1,800 pixels wide. How wide can he print it at 300 ppi? $1,800 \div 300 = 6$ inches, which is about 15 cm. If he needs it 30 cm wide on a poster, it will be about 150 ppi, which may be acceptable on a wall poster but not in a brochure.

What does not work

Changing the ppi number in photo software, or enlarging a small photo, does not add real detail. The computer only guesses the new pixels, and the picture looks soft. Some tools enlarge more cleverly than others, but none can bring back detail that was never captured.

Getting good originals

- Photos sent through chat apps are usually compressed and made smaller. Ask the client to send them as a document or file attachment, which keeps the original.
- A logo copied from a website or a screenshot is low resolution. Ask for the original vector logo file, such as a CDR, AI, EPS, SVG or PDF.
- Vector artwork, such as logos and text drawn in CorelDRAW or Illustrator, has no resolution limit. It prints sharp at any size.

TRY THIS

Take a photo from your phone and find its size in pixels. Work out how big it could be printed at 300 ppi and at 150 ppi.

CHAPTER 4

Bleed, trim and safe area

Why bleed is needed

Printed pieces are usually printed several to a large sheet, then cut on a machine called a **guillotine**, which cuts a stack of sheets at once. The sheets can shift a tiny amount, so the cut is never perfect to the millimetre. If a background colour stops exactly at the cutting line, some copies will show a thin white line along the edge.

Three lines to know

Line	What it is
Trim line	Where the paper is cut; the finished size
Bleed line	Usually about 3 mm outside the trim; backgrounds and photos run to here

Line	What it is
Safe line	Usually 3 to 5 mm inside the trim; text and logos stay inside it

Anything that touches the edge of the finished piece, such as a background colour or a photo, must extend to the bleed line. Anything important must stay inside the safe line.

Working out sizes with bleed

Add the bleed to both sides of each measurement.

Finished size	With 3 mm bleed on all sides
A4, 210 x 297 mm	216 x 303 mm
A5, 148 x 210 mm	154 x 216 mm
Visiting card, 88.9 x 50.8 mm	94.9 x 56.8 mm

Ask how much bleed your printer wants. Three millimetres is common; some ask for more, especially for books and large items.

Setting bleed in your software

- **InDesign:** the New Document window has boxes for bleed. Enter 3 mm on all four sides.
- **CorelDRAW:** set the bleed in the page settings and turn on "show bleed".
- **MS Word:** it has no real bleed setting. Either keep the design away from the edges, or set a custom page size that includes the bleed, such as 216 x 303 mm, and tell the printer exactly what you did.

When you export the PDF, choose the option to include bleed. Add **crop marks**, the small lines outside the page that show where to cut, if the printer wants them.

TIP

Avoid a thin border close to the edge of a card or page. If the cut is even half a millimetre off, the border looks thicker on one side than the other. Either keep a border well inside the safe area or leave it out.

SAFETY

A guillotine has a very heavy, sharp blade. Only trained adults should operate it. Students should watch from a safe distance and never put a hand near the blade or under the clamp.

CHAPTER 5

Fonts: embedding and outlining

The missing font problem

Your computer has fonts that the printer's computer may not have. If you send an editable file and a font is missing, the printer's software swaps in a different font. Lines get longer or shorter, words jump to the next line, and a neat design breaks. There are two ways to prevent this: **embed** the fonts in a PDF, or **outline** them.

Embedding fonts in a PDF

Embedding means putting the font information inside the PDF file, so it displays and prints correctly on any computer. Most print presets do this by default. Often only the letters you used are included, which is called a **subset**.

To check: open the PDF in Adobe Acrobat Reader, open the document properties from the File menu and look at the Fonts tab. Each font should say "Embedded" or "Embedded Subset".

Some fonts have licences that do not allow embedding. Your software may warn you or refuse. In that case, choose another font or outline the text, if the licence allows that.

Outlining fonts

Outlining turns letters into ordinary shapes. CorelDRAW calls it **Convert to Curves**; Adobe programs call it **Create Outlines**. Outlined text looks exactly the same everywhere, because it is no longer text.

	Embedding	Outlining
Text stays editable	Yes, in the original file	No
Text can be searched or copied in the PDF	Yes	No
Works in any PDF	Yes, if embedded properly	Yes
Best for	Most PDFs, books, forms	Logos, cards, banners for shops that ask for it

REMEMBER

Always keep an editable copy before outlining. Once text is outlined, you cannot fix a spelling mistake by typing.

Hindi and other Indian scripts

Use **Unicode** fonts for Hindi, so the text stays correct across computers. Legacy fonts, which type Hindi through English keys, are a common cause of garbled printing when a file moves to another computer. Send a PDF with fonts embedded, then open it yourself and check every matra and joined letter before the printer starts.

Small and reversed text

Text that is very small, very thin, or **reversed** (white or light text on a dark or coloured background) can fill in with ink and become hard to read. For small reversed text, choose a sturdy sans serif font, avoid very thin strokes, and keep it a little larger than you otherwise would.

EXAMPLE

Rohit sent his cousin's wedding card as an editable file. The printer did not have his script font, and the names printed in a plain default font. The second time, he sent a PDF with fonts embedded and checked it on another computer first. It printed exactly as designed.

Black, rich black and spot colours

Plain black

In CMYK, plain black is C0 M0 Y0 K100: black ink only. It is right for text, especially small text, because it is printed by a single ink and stays perfectly sharp.

Rich black

Over a large area, black ink alone can look slightly dull or greyish. For big black backgrounds, designers use **rich black**: 100 percent black plus some cyan, magenta and yellow underneath. One common recipe is C60 M40 Y40 K100, but printers have their own preferences, so ask yours.

Never use rich black for small text or thin lines. Four inks must land in exactly the same place, and if they shift slightly, coloured edges appear around the letters.

Registration colour

Design programs have a colour called **registration**, which prints 100 percent of all four inks. It is meant only for crop marks and printer's marks. Never use it in a design. It puts far too much ink on the paper, which can smudge, stick to other sheets and dry badly.

Total ink

The sum of the four CMYK values in a colour is called the **total ink coverage**. A colour of C100 M100 Y100 K100 has 400 percent. Printers set a maximum, often somewhere around 300 percent for coated paper and lower for uncoated paper and newsprint. Very dark colours mixed by hand can go over the limit. Ask your printer for theirs.

TIP

Make sure white text and white shapes are not set to **overprint**. Overprint tells the press to print a colour on top of others instead of cutting out a space for it. White printed on top of colour is no ink at all, so white overprinting objects simply disappear.

Spot colours

A **spot colour** is an ink that is mixed to an exact colour before printing, instead of being built from CMYK dots. The most widely used system for naming spot colours is the **Pantone** matching system, which publishes swatch books with numbered colours.

Spot colours are used for:

- exact brand colours that must match every time;
- colours CMYK cannot make, such as metallic gold and silver or very bright fluorescent shades;
- one-colour or two-colour jobs on an offset press, which can cost less than full colour.

Pantone books show each colour on coated paper and on uncoated paper, because the same ink looks different on each.

If a job is printed in full CMYK, convert any spot colours to CMYK before sending the file, unless you are paying for an extra ink. A spot colour left in by mistake may print as an extra plate or convert unpredictably.

EXAMPLE

A jeweller in Thrissur wants gold on his visiting cards. CMYK can only imitate gold with a yellow-brown. For real shine, the printer uses a metallic spot ink or a gold foil finish, which costs more. The designer prepares the gold parts as a separate spot colour, as the printer instructed.

CHAPTER 7

Proofing

A **proof** is a trial version of the job that you check before the full print run. Most printing disasters could have been caught at the proof stage.

Kinds of proof

Proof	What it is	Good for
Soft proof	A PDF checked on screen	Text, layout, page order

Proof	What it is	Good for
Digital proof	A sample printed on a digital printer	Checking size, fold and general colour
Press proof	A sample printed on the actual press and paper	Colour-critical jobs; costs more

What to check

- 1. Text:** every word, especially names, which clients notice first.
- 2. Numbers:** phone numbers, dates, times, prices in ₹, PIN codes and registration numbers such as GSTIN. Check each digit against the client's original.
- 3. Images:** right photo, right way round, not blurred.
- 4. Layout:** alignment, margins, nothing too close to the trim.
- 5. Bleed and size:** correct finished size and bleed on all edges.
- 6. Folds and pages:** fold positions right; pages in the right order.

How to proofread well

- Print it and read on paper. You will spot mistakes you missed on screen.
- Read slowly, aloud, with a ruler under each line.
- Check numbers separately, digit by digit.
- Ask a second person to check. Your eyes read what you meant to write.
- Make a **dummy**: print, fold and cut a sample to check fold positions and page order.

Get written approval

Send the client the final proof and ask them to reply in writing, even by a chat message, that it is approved. Number your versions, such as v1, v2 and v3, so everyone knows which one was approved.

EXAMPLE

A coaching centre in Indore printed 2,000 leaflets with the wrong date for its open day. At an example price of ₹ 1.20 per leaflet, the reprint cost $2,000 \times 1.20 = ₹ 2,400$, plus a lost week. Five minutes of careful proofreading would have saved both.

REMEMBER

In most print shops, once you approve a proof, any mistake left in it is your responsibility, not the printer's.

CHAPTER 8

Imposition basics

Imposition means arranging pages or items on the large printing sheet so that after printing, folding and cutting, everything comes out the right way up and in the right order. Printers usually do this themselves, but knowing how it works helps you design correctly.

Many-up printing

Small items such as visiting cards, labels and tickets are printed many to one sheet, then cut apart. This is called **n-up** printing, or **step and repeat**.

EXAMPLE

A card is 3.5 x 2 inches. With about 1/8 inch of bleed on each side, each card needs 3.75 x 2.25 inches. On a 12 x 18 inch sheet: across the 12-inch side, $12 \div 3.75 = 3.2$, so 3 cards fit. Along the 18-inch side, $18 \div 2.25 = 8$ cards fit. That is $3 \times 8 = 24$ cards per sheet. Turned the other way, only $5 \times 4 = 20$ fit. Real printers also leave a margin for the machine to grip the sheet, so the true number may be lower.

How a booklet is imposed

A simple booklet is made of sheets folded in half and stapled in the middle. Each sheet carries four pages: two on the front and two on the back. So the page count must be a multiple of four.

For an 8-page booklet made of 2 sheets, the pages sit like this:

Sheet	Front side (left, right)	Back side (left, right)
Outer sheet	8 and 1	2 and 7
Inner sheet	6 and 3	4 and 5

Notice that each pair adds up to 9, which is the page count plus one. This rule works for any saddle-stitched booklet: in a 12-page booklet, each pair adds up to 13.

Reader spreads and printer spreads

A **reader spread** is two pages as the reader sees them side by side, such as pages 2 and 3. A **printer spread** is two pages as they sit side by side on the printed sheet, such as pages 8 and 1. Unless the printer asks otherwise, send single pages in order, from page 1 to the last page, and let the printer impose them.

Signatures

Large jobs, such as books, are printed on big sheets that are folded several times into a bundle of 8, 16 or 32 pages, called a **signature**. Signatures are stacked and bound together. This is why book page counts are often multiples of 8 or 16.

TRY THIS

Take two A4 sheets, fold them in half together and staple along the fold. Number the pages 1 to 8 with a pencil. Now pull out the staples and unfold the sheets. You will see 8 beside 1, and 2 beside 7, exactly as in the table.

CHAPTER 9

Flex and vinyl printing

Banners, shop boards and window graphics are printed on large-format machines onto plastic materials instead of paper. The rules of bleed, CMYK and resolution still apply, with a few changes.

Flex

Flex is a sheet of PVC plastic used for banners and hoardings. It is printed on wide inkjet machines.

- **Frontlit** flex is lit from the front, by daylight or lamps. Most banners are frontlit.
- **Backlit** flex lets light through and is used in glow sign boxes that are lit from inside.

Sizes are usually given in feet, and prices are usually quoted per square foot. A 6 x 3 foot banner is 18 square feet; at an example rate of ₹ 15 per square foot it would cost 18 x 15 = ₹ 270. Real rates vary, so get a quote.

Preparing flex files

1. Ask the printer whether to design at full size or at a smaller scale, such as one-tenth.
2. Use CMYK.
3. Images around 72 to 150 ppi at full size are common for banners viewed from a distance; follow the printer's advice.
4. Keep text 2 to 3 inches in from the edges. The edges get **eyelets** (metal rings for tying), folds or a frame.
5. Make text large and bold, with strong contrast.
6. Outline the fonts and send the format the printer asks for, often PDF, CDR, TIFF or a high-quality JPEG.

Vinyl

Vinyl is a thin plastic film, usually with glue on the back. It is used for shop glass, vehicles, walls and signboards. In India, printed vinyl is often stuck onto **sunboard** (a light foam PVC sheet) or onto **ACP** (aluminium composite panel) for shop fronts.

Type	How it is made	Design needs
Printed vinyl	Printed in full colour, then cut to size	Like a flex file: CMYK, bleed, enough resolution
Cut vinyl	Letters and shapes cut from coloured vinyl by a cutting plotter	Vector outlines only, flat single colours, no tiny details
One-way vision	Perforated vinyl for glass: the picture shows outside, people inside can see out	Bold images; fine text breaks up because of the holes

Outdoor prints fade in strong sun over time. Printers can laminate vinyl to protect it.

DID YOU KNOW

PVC flex is hard to recycle. Some states and cities in India restrict plastic and PVC banners, and cloth or paper alternatives exist. Check local rules before planning a big campaign.

SAFETY

Banners and boards are fixed at a height, and glow sign boxes run on mains electricity. Installation must be done by trained adults, and any wiring by a qualified electrician. Students must never work on mains wiring or climb to fix boards.

CHAPTER 10

Folding and binding

Common folds

Fold	Description	Panels
Half fold	Folded once in the middle	4
Tri-fold	Folded twice, one side tucked inside the other	6
Z-fold	Folded twice in opposite directions, like a Z	6
Gate fold	Two outer panels fold in to meet in the middle	6

The tri-fold leaflet

An A4 sheet turned sideways is 297 mm wide. In a tri-fold, one panel folds inside the others, so it must be slightly narrower or it will buckle.

EXAMPLE

For an A4 tri-fold, make two panels 100 mm wide and the inside flap 97 mm wide. $100 + 100 + 97 = 297$ mm. Keep text at least 5 mm away from each fold, just as you keep it away from the trim.

Creasing and grain

Thick paper and card can crack along a fold. Printers often **crease** (also called score) heavy paper, typically above about 170 GSM, before folding. Paper also has a **grain**, the direction in which most of its fibres lie. A fold along the grain is neat; a fold across it can be rough. The printer will plan this, but it is one more reason to tell them about folds early.

Binding methods

Method	How it works	Notes
Saddle stitch	Staples through the fold	Page count a multiple of 4; for thin booklets
Perfect binding	Pages glued into a cover with a flat spine	Paperback books; needs a spine width
Spiral or wiro	Holes punched; a coil or wire loop holds pages	Lies flat; common for reports and manuals
Case binding	Pages sewn or glued into a hard cover	Hardback books; costs more

Margins for binding

- **Perfect binding** does not open flat, so the inside margin, near the spine, must be bigger than the outside margin.
- **Spiral and wiro** binding punch holes along the edge, so leave extra space on the binding side.
- **Saddle stitch** has an effect called **creep**: in a thick booklet, the inner sheets push outward and get trimmed slightly more. Keep text away from the outer edges, and the printer will adjust for the rest.

EXAMPLE

A book has 200 pages, which is 100 leaves (a leaf is one sheet with a page on each side). If the paper is 0.1 mm thick, the pages make a spine about $100 \times 0.1 = 10$ mm thick, plus the cover. Real thickness depends on the paper, so always ask the printer for the exact spine width before designing the cover.

TRY THIS

Fold an A4 sheet into a tri-fold leaflet. Number the panels 1 to 6 and write on each what it would hold: cover, contents, contact details. Then unfold it and see which panels sit next to each other on each side of the sheet.

CHAPTER 11

Preflight, talking to the printer, and costly mistakes

Preflight

Preflight means checking a file for printing problems before sending it. The word comes from the checks a pilot makes before take-off. InDesign has a live preflight panel, and Adobe Acrobat Pro has preflight tools, but a careful checklist works in any program.

Preflight checklist

- Correct finished size, with bleed on every edge that needs it.
- Text and logos inside the safe area; nothing near the folds.
- Colour mode CMYK, unless the printer asked for something else.
- No unwanted spot colours; no registration colour in the design.
- Photos at a suitable resolution for their final size.
- Fonts embedded, or outlined where the printer asked for it.
- Plain black for small text; rich black only on large areas.
- No very thin lines.
- Page count right for the binding, with pages in order.
- Spelling, numbers and names checked, and the proof approved in writing.
- PDF exported with the preset the printer recommends, such as a PDF/X standard.

Talking to the printer

Speak to the printer before you start designing, not after. Ask:

1. What finished size, bleed and safe margin do you want?

2. Which file format and PDF settings do you prefer?
3. Which colour settings or profile should I use?
4. What resolution do you need for photos?
5. Do you want crop marks?
6. Which paper, finish (such as lamination) and binding are we using?
7. How will you show me the proof, and how long will printing take?

Then give a clear written job sheet.

Job detail	Example: leaflet for Sai Medical Store, Nashik
Finished size	A5, 148 x 210 mm
Sides	Both sides, full colour
Paper	130 GSM matt art paper
Quantity	2,000
File	PDF with 3 mm bleed, fonts embedded
Proof	Digital proof before printing

Costly mistakes

Mistake	What it costs
Wrong size or no bleed	White edges, cut-off text, or a complete reprint
RGB colours	Dull colours and an unhappy client
Low-resolution photos	Blurred pictures that cannot be fixed after printing
Missing fonts	Broken layout or garbled Hindi
Wrong page count for saddle stitch	Blank pages added, or the job sent back
Rich black on small text	Fuzzy, coloured edges on the letters
White set to overprint	Text or shapes that simply vanish
Spelling or number errors	The whole run wasted

REMEMBER

Send files by email or as a file attachment, not as photos in a chat app, which may compress them. Name each file clearly with the job, size and version.

CHECK YOURSELF

Practice questions

1. What is the size of A4 in millimetres, and how is A5 related to it?
2. Why can an A4 design be scaled to A3 without changing its layout?
3. What does GSM mean?
4. What is the difference between coated and uncoated paper?
5. Why do printers add a separate black ink instead of mixing C, M and Y?
6. Why do some bright screen colours look dull in print?
7. What is a colour profile?
8. How many pixels wide should a photo be to print 4 inches wide at 300 ppi?
9. A photo is 2,400 pixels wide. How wide can it be printed at 300 ppi, in inches?
10. Why does enlarging a small photo in software not fix low resolution?
11. What are the trim, bleed and safe lines?
12. What is the size of an A5 page with 3 mm bleed on all sides?
13. What is the difference between embedding and outlining fonts?
14. How can you check whether fonts are embedded in a PDF?
15. Why should rich black not be used for small text?
16. Why should registration colour never be used in a design?
17. What is a spot colour, and when would you use one?
18. Name three kinds of proof.

19. In an 8-page saddle-stitched booklet, which page sits beside page 3 on the printed sheet?
20. What is the difference between frontlit and backlit flex?
21. What does a cut vinyl design need?
22. Why is the inside flap of a tri-fold leaflet made narrower?
23. What is creep in saddle-stitched booklets?
24. Name five questions to ask a printer before designing.

ANSWER KEY

Answers

1. A4 is 210 x 297 mm. A5 is half of A4, made by halving the long side: 148 x 210 mm.
2. All A sizes have sides in the same ratio, about 1 to 1.414, so they are the same shape.
3. Grams per square metre: what a one-metre-square sheet of the paper would weigh. Higher means thicker.
4. Coated (art) paper has a smooth surface layer that gives sharp, bright colour. Uncoated (maplitho) paper has no coating, looks softer and is easy to write on.
5. C, M and Y together make a muddy dark brown, use a lot of ink and dry slowly. Black ink gives a true black and sharp text.
6. Screens can show colours outside the CMYK gamut, so those colours are shifted to the nearest printable colour.
7. A data file that describes how a device or printing process shows colour, used to convert colours correctly.
8. $4 \times 300 = 1,200$ pixels.
9. $2,400 \div 300 = 8$ inches.
10. The computer only guesses the new pixels; it cannot create detail that was never captured.
11. The trim line is where the paper is cut. The bleed line is about 3 mm outside it, where backgrounds extend. The safe line is 3 to 5 mm inside it, where text must stay.
12. 154×216 mm.
13. Embedding puts the font data inside the PDF and keeps text as text. Outlining turns letters into shapes, which look the same everywhere but cannot be edited.

14. Open it in Adobe Acrobat Reader, open document properties from the File menu and look at the Fonts tab for "Embedded" or "Embedded Subset".
15. Four inks must line up exactly; any slight shift gives coloured, fuzzy edges on small letters.
16. It prints all four inks at 100 percent, which is far too much ink and can smudge and dry badly. It is only for crop marks.
17. A premixed ink of an exact colour, such as a Pantone colour. Use it for exact brand colours, metallic or fluorescent colours, or one- or two-colour jobs.
18. Soft proof, digital proof and press proof.
19. Page 6, because the pairs add up to 9.
20. Frontlit flex is lit from the front by daylight or lamps; backlit flex lets light through from a lit box behind it.
21. Vector outlines, flat single colours and no tiny details.
22. It folds inside the other panels, so it must be slightly narrower or it will buckle.
23. In a thick booklet the inner sheets push outward at the edges and are trimmed slightly more, so text must stay away from the outer edges.
24. Any five of: size, bleed and safe margin; file format and PDF settings; colour settings or profile; photo resolution; crop marks; paper, finish and binding; proof method and timing.

WORD LIST

Glossary

Art paper

an Indian name for coated paper, which has a smooth surface for sharp, bright printing.

Bleed

background or image that extends past the trim line so no white edge shows after cutting.

CMYK

cyan, magenta, yellow and black, the four inks used in colour printing.

Colour profile

a data file that describes how a device or printing process shows colour.

Crease

a pressed line made in thick paper so it folds without cracking; also called a score.

Creep

the way inner sheets of a thick saddle-stitched booklet push outward at the edge.

Crop marks

small lines outside the page that show where to cut.

Embedding

including font data inside a PDF so it shows correctly on any computer.

Gamut

the range of colours a screen or printing process can produce.

GSM

grams per square metre, a measure of paper weight and thickness.

Guillotine

a paper-cutting machine with a heavy blade that cuts a stack of sheets at once.

Imposition

arranging pages or items on a printing sheet so they come out right after folding and cutting.

Maplitho

an Indian name for common uncoated printing paper.

Outlining

converting text into shapes so it no longer depends on the font.

Overprint

printing one colour on top of another instead of leaving a gap for it.

Perfect binding

binding in which pages are glued into a cover with a flat spine.

Preflight

checking a file for printing problems before sending it to the printer.

Proof

a trial version of a job checked and approved before the full print run.

Registration colour

a colour that prints all four inks at full strength, meant only for printer's marks.

Rich black

black ink with some cyan, magenta and yellow added, for deep black areas.

Saddle stitch

binding with staples through the folded spine of a booklet.

Safe area

the area inside the trim where important text and images must stay.

Signature

a large printed sheet folded into a bundle of pages, such as 16, for binding.

Spot colour

a premixed ink of one exact colour, such as a Pantone colour.

Trim

the line where printed work is cut to its finished size.



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